Remarks

Applicant requests reconsideration and allowance of the pending claims in light of the foregoing amendments and following remarks.

Claims 1-15, 17-22, 24, 25, and 27-34 remain pending in the application. Claims 1, 8, 18, 25, and 30 are independent.

Claim 18 is amended for the sole purpose of addressing some minor typographical matters. No new matter is added.

Claims 1-15, 17-22, 24, 25, and 27-34 are rejected. These rejections are respectfully traversed.

Request for Examiner Interview if Any Issues Remain

If any issues remain after entry of the present Amendment, Applicant formally requests that the Examiner contact the undersigned prior to issuance of the next Office Action to arrange a telephonic interview pursuant to MPEP § 713.01.

Claims 1-14, 17, 25, and 27-34 are Patentable over Shenoy, Hartmann, and Moberg under 35 U.S.C. § 103

The Office Action ("Action") rejects claims 1-14, 17, 25, and 27-34 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pub. No. 2003/0223425 of Shenoy et al. ("Shenoy") in view of U.S. Patent No. 5,936,957 to Hartmann et al. ("Hartmann") and further in view of U.S. Patent No. 6,697,872 to Moberg et al. ("Moberg"). Applicant traverses these rejections.

Claims 1-7

Independent claim 1 is directed to a system, and recites the following features (with emphasis added):

> a control card, comprising:
> a control processor to execute a control portion of an exterior gateway protocol; and
> a routing table of exterior gateway routes and devices;
> a line card, comprising:
> a line processor to execute an offload portion of an exterior gateway protocol; and
> a communications port to allow termination of at least one communication link; and

a backplane to allow the control card and the line card to communicate, ***wherein the line card is configured to filter mal-formed, illegal and duplicate update messages from gateway peers***.

The Action concedes at page 9 that Shenoy and Hartmann fail to teach or suggest at least "wherein the line card is configured to filter mal-formed, illegal and duplicate update messages from gateway peers," as recited in independent claim 1. The Action then asserts at page 10 that this feature is taught in Moberg at col. 4, lines 43-67. Applicant respectfully disagrees. The cited section of Moberg simply states that a line card processor can examine a packet to "verify its validity." However, Moberg *does not provide any further explanation of how the validity of a packet is determined.* More specifically, Moberg *does not teach or suggest that such validity is based on mal-formed, illegal, or duplicate update messages*. Furthermore, the cited section of Moberg specifically refers to the processing of *data packets* and does not teach or suggest any such processing of *update messages from gateway peers*.

The Office Action dated December 11, 2008 asserts at page 18 that "Moberg teaches validity is based on mal-formed, illegal, or duplicate update messages" but merely directs attention to the previously-cited section of Moberg (col. 4, lines 43-67) *without any comment or explanation. How does the cited section [or any other section] of Moberg teach this?* Applicant can find nothing in Moberg that discusses or suggests anything pertaining to mal-formed, illegal, or duplicate update messages, let alone the filtering of mal-formed, illegal, or duplicate update messages from gateway peers.

Therefore, Moberg fails to cure the deficiencies of Shenoy and Hartmann because Moberg does not teach or suggest at least "wherein the line card is configured to filter mal-formed, illegal and duplicate update messages from gateway peers."

Accordingly, because Shenoy, Hartmann, and Moberg do not teach or suggest each and every feature recited in independent claim 1, the 35 U.S.C. § 103(a) rejection of independent claim 1 should be withdrawn and such action is respectfully requested.

Dependent claims 2-7 depend from independent claim 1 and should be allowed for at least the same reasons that pertain to the parent claim 1. Dependent claims 2-7 are also independently patentable. Therefore, the 35 U.S.C. § 103(a) rejections of dependent claims 2-7 should be withdrawn and such action is respectfully requested.

Claims 8-14 and 17

Independent claim 8 is directed to a method of processing an exterior gateway protocol packet, and recites the following features (with emphasis added):

> receiving an incoming packet at a line-card;
> determining if the packet is valid;
> parsing the packet to extract protocol data;
> transmitting any control-relevant data to a control card; and
> ***generating message traffic at the line card for peer gateways including announcing routes to the peer gateways.***

Shenoy does not teach or suggest at least "generating message traffic at the line card for peer gateways including announcing routes to the peer gateways," as recited in independent claim 8. The Action asserts that Shenoy teaches this feature and directs attention to paragraph [0022]. However, the cited paragraph of Shenoy actually states that "forwarding information is *generated by the processors...and managed centrally at the primary control module*" (emphasis added). Shenoy goes on to describe how instances of this forwarding information are provided to the line cards by the primary control module. Thus, Shenoy actually teaches that forwarding information is generated at either the control card or at the line cards but that such information is only sent to the line cards from the control card and *not from a line card to another router*. Therefore, Shenoy does not teach this particular feature of the claim, which specifically refers to *a line card announcing routes to peer gateways*.

Because Shenoy does not teach or suggest at least "generating message traffic at the line card for peer gateways including announcing routes to the peer gateways," and because Hartmann and Moberg similarly fail to teach or suggest at least this feature, the combination of Shenoy, Hartmann, and Moberg does not teach or suggest each and every feature recited in independent claim 8. Accordingly, the 35 U.S.C. § 103(a) rejection of independent claim 8 should be withdrawn and such action is respectfully requested.

Dependent claims 9-14 and 17 depend from independent claim 8 and should be allowed for at least the same reasons that pertain to the parent claim 8. Dependent claims 9-14 and 17 are also independently patentable. Therefore, the 35 U.S.C. § 103(a) rejections of dependent claims 9-14 and 17 should be withdrawn and such action is respectfully requested.

Furthermore, the cited art does not teach or suggest at least "determining if the packet is a mal-formed packet," as recited in dependent claim 10. The Action proposes that Moberg teaches

this feature. However, as discussed above with respect to the parent claim 1, *Moberg does not teach anything pertaining to determining whether a packet is mal-formed.* Accordingly, dependent claim 10 should be allowed over the cited art for at least this additional reason.

In addition, the cited art does not teach or suggest at least "applying a packet filter to the packets," as recited in dependent claim 11. The Action asserts at page 11 that Moberg teaches this feature because it teaches that, after validation, a packet is processed. Applicant respectfully disagrees. While Moberg may teach that a packet is processed at the line card, *Moberg does not teach or suggest that a packet filter is applied to the packet.* Accordingly, dependent claim 11 should be allowed over the cited art for at least this additional reason.

Also, the cited art does not teach or suggest at least "applying an address filter to the packets," as recited in dependent claim 12. The Action asserts at page 11 that Moberg teaches this feature because it teaches that a line card examines the address of a packet. Applicant respectfully disagrees. While Moberg may teach that a line card examines the address of a packet, *Moberg does not teach that an address filter is applied to the packet*; rather, Moberg merely teaches that the line card examines the address to determine which card should process the packet (*see* col. 4, lines 49-53). Therefore, Moberg does not teach applying an address filter to a packet. Accordingly, dependent claim 12 should be allowed over the cited art for at least this additional reason.

Additionally, the cited art fails to teach or suggest at least "transmitting data related to valid updates from the peer gateways," as recited in dependent claim 13. The Action asserts at page 5 that Shenoy teaches this feature and directs attention to Shenoy at paragraph [0027]. Applicant respectfully disagrees. The cited paragraph of Shenoy simply asserts that a line card can communicate with a control card and *does not describe the substance of such communication.* While paragraph [0033] of Shenoy provides more detail on what information is exchanged between the line card and control card, *it does not mention any valid updates from peer gateways.* In fact, all of the described communications take place between operating systems in the same router. Therefore, Shenoy does not teach or suggest "transmitting data related to valid updates from the peer gateways." Accordingly, dependent claim 13 should be allowed over the cited art for at least this additional reason.

Claims 25 and 27-29

Independent claim 25 is directed to a method of establishing a control portion of a distributed exterior gateway protocol, and recites the following features (with emphasis added):

> initializing a control card;
> registering a control portion of a protocol to be executed by the control card with a central registration point;
> setting up control connections with line cards executing offload portions of the protocol;
> ***configuring the line cards including providing a routing table and policy data to each line card***; and
> performing central Border Gateway Protocol functions.

The Action asserts at page 11 that Moberg teaches "providing a routing table and policy data to each line card" and directs attention to col. 4, lines 43-67. Applicant respectfully disagrees. As discussed above, the cited section of Moberg merely states that a line card processor can examine a packet to "verify its validity." While Moberg goes on to state that the line card processor can "determine how to handle certain options provided by the protocol being used to transmit the packet," neither the cited section nor any other section of Moberg teaches or suggests anything pertaining to *providing a routing table to a line card* or *providing policy data to a line card*, let alone providing both to a line card. Therefore, Moberg does not teach or suggest at least "providing a routing table and policy data to each line card." Shenoy and Hartmann fail to cure the deficiencies of Moberg.

Accordingly, because the combination of Shenoy, Hartmann, and Moberg does not teach or suggest each and every feature recited in independent claim 25, the 35 U.S.C. § 103(a) rejection of independent claim 25 should be withdrawn and such action is respectfully requested.

Dependent claims 27-29 depend from independent claim 25 and should be allowed for at least the same reasons that pertain to the parent claim 25. Dependent claims 27-29 are also independently patentable. Therefore, the 35 U.S.C. § 103(a) rejections of dependent claims 27-29 should be withdrawn and such action is respectfully requested.

Furthermore, the cited art fails to teach or suggest at least "registering the control portion with a distributed control plane architecture infrastructure module," as recited in dependent claim 27. The Action asserts at pages 5-6 that Shenoy teaches this feature because it teaches a "distribution engine [that] manages the distribution of forwarding information at kernel space level" and directs attention to paragraph [0032] of Shenoy. Applicant respectfully disagrees. As

the Action itself acknowledges, the distribution engine of Shenoy manages "distribution of forwarding information" and, therefore, *it does not teach or suggest registration of the control portion of a protocol* (*see also* paragraph [0033] of Shenoy). Shenoy does not teach or suggest any other elements that pertain to registration of the control portion of a protocol. Therefore, Shenoy does not teach or suggest "registering the control portion with a distributed control plane architecture infrastructure module." Accordingly, dependent claim 27 should be allowed over the cited art for at least this additional reason.

Claims 30-34

Claims 30-34 recite features that are similar to those discussed above with respect to claims 8-12, respectively, and are allowable for at least the same reasons presented above with respect to claims 8-12. Accordingly, the 35 U.S.C. § 103(a) rejections of claims 30-34 should be withdrawn and such action is respectfully requested.

Claims 18-22 and 24 are Patentable over Shenoy, Hartmann, Moberg, and Ball under 35 U.S.C. § 103

The Action rejects claims 18-22 and 24 under 35 U.S.C. § 103(a) as being unpatentable over Shenoy in view of Hartmann, further in view of Moberg, and further in view of U.S. Pub. No. 2005/0074003 of Ball et al. ("Ball"). Applicant traverses these rejections.

Independent claim 18 as amended is directed to a method of establishing an offload portion of a distributed exterior gateway protocol, and recites the following features (with emphasis added):

> initializing a line card;
> registering an offload portion of a protocol to be executed by the line card with a central registration point;
> setting up a control connection with a control card;
> ***transmitting data resource data to the control card;***
> receiving configuration information from the control card;
> establishing connections with exterior gateway peers;
> performing Border Gateway Protocol functions at the line card, including running output policies for each of the gateway peers; and
> ***transmitting only valid Border Gateway Protocol data to the control card.***

The cited art does not teach or suggest at least "transmitting data resource data to the control card," as recited in independent claim 18. The Action asserts at page 13 that Shenoy

teaches this feature because it teaches "forwarding information to control module" and directs attention to paragraph [0035]. Applicant respectfully disagrees. Shenoy *does not teach that data resource data is sent to the control card*; rather, Shenoy specifically teaches that *forwarding information is exchanged between the line cards and the control card.* Therefore, Shenoy does not teach or suggest "transmitting data resource data to the control card." Hartmann, Moberg, and Ball fail to cure the deficiencies of Shenoy.

Furthermore, the cited art does not teach or suggest at least "transmitting only valid Border Gateway Protocol data to the control card," as recited in independent claim 18. The Action asserts at page 14 that Shenoy teaches this feature because "protocols are implemented by control module" and directs attention to paragraph [0017]. Applicant respectfully disagrees. The mere fact that Shenoy's control modules can perform protocol implementation functions does not necessarily mean that the line cards transmit only valid BGP data to the control module. In fact, paragraph [0017] of Shenoy actually teaches that the line cards transmit *many types of data* to the control module. Also, Shenoy does not teach or suggest that the line cards *distinguish between valid and invalid data packets* in determining which data packets to forward to the control module. Therefore, Shenoy does not teach or suggest "transmitting only valid Border Gateway Protocol data to the control card." Hartmann, Moberg, and Ball all fail to cure the deficiencies of Shenoy.

Accordingly, because the combination of Shenoy, Hartmann, Moberg, and Ball does not teach or suggest each and every feature recited in independent claim 18, the 35 U.S.C. § 103(a) rejection of independent claim 18 should be withdrawn and such action is respectfully requested.

Dependent claims 19-22 and 24 depend from independent claim 18 and should be allowed for at least the same reasons that pertain to the parent claim 18. Dependent claims 19-22 and 24 are also independently patentable. Therefore, the 35 U.S.C. § 103(a) rejections of dependent claims 19-22 and 24 should be withdrawn and such action is respectfully requested.

Furthermore, the cited art does not teach or suggest at least "filtering mal-formed, illegal and duplicate update messages from the gateway peers," as recited in dependent claim 21. While the Action asserts at page 15 that Moberg teaches this feature, Applicant submits that Moberg does not teach anything pertaining to "mal-formed, illegal and duplicate update messages from the gateway peers," as discussed above, let alone filtering such messages. Accordingly, dependent claim 21 should be allowed over the cited art for at least this additional reason.

Claim 15 is Patentable over Shenoy, Hartmann, Moberg, and Harvey under 35 U.S.C. § 103

The Action rejects claim 15 under 35 U.S.C. § 103(a) as being unpatentable over Shenoy in view of Hartmann, further in view of Moberg, and further in view of U.S. Pub. No. 2003/0140167 of Harvey et al. ("Harvey"). Applicant traverses this rejection.

Dependent claim 15 depends from independent claim 8 and should be allowed for at least the same reasons that pertain to the parent claim 8. Dependent claim 15 is also independently patentable. Therefore, the 35 U.S.C. § 103(a) rejection of dependent claim 15 should be withdrawn and such action is respectfully requested.

Furthermore, the cited art does not teach or suggest at least "generating responses required by the incoming packets," as recited in dependent claim 15. The Action asserts at page 16 that Harvey teaches this feature and directs attention to paragraph [0030] of Harvey. Applicant respectfully disagrees. The cited paragraph merely teaches that an acknowledgement message can be sent every time a packet is received at a routing module. Harvey *does not teach that such an acknowledgment message was required by the incoming packet.* In fact, Harvey appears to teach that its system does not distinguish between incoming packets that require an acknowledgement and those that do not require an acknowledgement. Therefore, Harvey does not teach or suggest "generating responses required by the incoming packets." Accordingly, dependent claim 15 should be allowed over the cited art for at least this additional reason.

Conclusion

The present application is in condition for allowance and such action is respectfully requested.

Customer No. 32231

Respectfully submitted,

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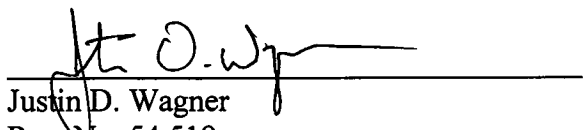

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